

OAXACACORIS, A NEW PLANT BUG GENUS AND THREE NEW  
SPECIES OF ORTHOTYLINI FROM MEXICO  
(HETEROPTERA: MIRIDAE)

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*Abstract.*—The new genus *Oaxacacoris* is diagnosed and described, including three new species: *cygnus*, *publensis*, *schaffneri*. All species occur in southcentral Mexico. The male genitalia of all species are illustrated, and a dorsal habitus provided for the male of *cygnus*. Scanning electron micrographs of the scale-like setae and pretarsus of *schaffneri* also are included.

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The idea for this paper originated during our revision of the genus *Pseudopsallus* (Stonedahl and Schwartz, 1986). Among the material on loan to us from Joseph C. Schaffner, Texas A&M University, College Station were specimens with a resemblance to *Pseudopsallus*, but which we now place in the new genus *Oaxacacoris*. The relationship of *Oaxacacoris* to other orthotyline genera is not well understood. This is due to the limited knowledge of Mexican Miridae in general, as well as the poorly defined limits of many New World genera of Orthotylini.

In our revision of the western North American genus *Pseudopsallus* (Stonedahl and Schwartz, 1986), we selected *Oaxacacoris* as the sister group of the former genus because these two genera shared derived characters of the male genitalia that have yet to be discovered in other genera of the tribe. Further, we suggested that *Oaxacacoris* and *Pseudopsallus* belonged to a complex of genera united by similarities in type and fine structure of setae and by the general form of the male genitalia. *Oaxacacoris* can be distinguished from other genera of this group by the characters given in the generic

diagnosis. The only known host association for the genus is *Mimosa rhododactyla* B. L. Robinson (Fabaceae).

All holotypes and some paratypes are deposited in the collection of the American Museum of Natural History, New York (AMNH). The remaining paratypes and additional specimens are deposited in the Texas A&M University collection (TAM). All measurements are in millimeters.

*Oaxacacoris* Schwartz and Stonedahl,  
NEW GENUS

*Diagnosis.*—Recognized by the green or yellow green, slightly shining general appearance; dorsal vestiture with silvery and golden brown to black, narrow, scale-like setae with converging ridges (Fig. 2a); and male genitalia with the following characteristics: anterodorsal margin of aperture of genital capsule with three tergal processes, one right lateral and two left lateral of midline (Figs. 3, 10, 17); lateralmost pair of processes very large, slightly flattened, extending well beyond margins of aperture; left medial tergal process small, simple, oriented ventrad into aperture; dorsal lobe of left paramere greatly expanded distally, with

4-9 strong spines (Figs. 6, 13, 19); right par-amere subquadrate in lateral view, with prominent, sometimes bifurcate, basal lobe (Figs. 8, 15, 22); and right spicula of vesica bisected to base, dorsal portion much smaller than ventral portion (Figs. 9, 16, 23).

Description.—Male. Macropterous. Small to moderate subovate body form; length 3.50-4.90 (apex of tylus to apices of hemelytra); width (across humeral angles of pronotum) 1.15-1.40; surface texture smooth; coloration dark to light green, variably suffused or mottled with yellow, with frons, anterior portion of pronotum, embolium, scutellum, and cuneus sometimes extensively yellow; dorsal vestiture with recumbent, narrow, golden scale-like setae and long, suberect, golden simple setae, sometimes also with recumbent, narrow, black scale-like setae and short to long, suberect, black simple setae. *Head*: Subtriangular; length of portion of head anterior of eye subequal to length of head posterior of anterior margin of eye in dorsal or lateral view; posterior margin without carina; frons and vertex weakly convex, gently sloping anteriorly, meeting tylus with weak suture; temporal area obsolete; eyes large, subovate, projecting slightly beyond anterolateral angles of pronotum in dorsal view, occupying six-sevenths of head height in lateral view, posterior margin sublinear, anterior margin slightly emarginate; antennal fossae small, contiguous with anterior margin of eye, ventral margin of fossae slightly to obviously dorsad of ventral margin of eye in lateral view; tylus smoothly curving to apex; juga triangular, flattened to slightly convex; lora rectangular, slightly swollen; gena present, width equal to diameter of antennal segment I; gula small; length of buccular flange and cavity equal, not reaching posterior margin of head; labium reaching apices of metacoxae or sometimes to sixth sternite; antennal segment I with length equal to or slightly greater than width of vertex, linear, tapered basally, with a few erect bristle-like setae on distal and interior surface; seg-

ments II-IV cylindrical, linear, diameter smaller than segment one, with densely distributed, reclining, short, black simple setae. *Pronotum*: Trapezoidal, broader than long, slightly sloping transversely and longitudinally; lateral margins straight, smoothly curved at junction with propleura; posterior margin straight; anterior and posterior angles broadly rounded; anterior margin slightly arcuate medially; calli weakly convex, reaching anterior angles and lateral margin of pronotum, confluent anteromedially, bordered posteriorly by faint to shallow depression; mesoscutum narrowly exposed; scutellum weakly convex or flattened. *Hemelytra*: Subparallel-sided, widest medially; claval vein weakly elevated; radial vein elevated basally, obsolete distally; cuneal incisure small; cuneal fracture angled slightly anteriorly; cuneus longer than broad; membrane lightly to strongly suffused with uniform fuscous, light species with short spot or band of dark fuscous or black near intervein of inner cell; inner cell longer than cuneus, slightly narrowed distally; outer cell triangular. *Legs*: Coloration uniformly yellow, or mixed yellow and yellow green with variable number of green spots; femora slightly flattened, tapered distally and basally, with short, reclining, black or fuscous simple setae, sometimes with setae restricted to anterior portion; meso- and meta-tibiae with several rows of minute, dark spinulae; tibiae with suberect, light, simple setae; tibial spines dark or light fuscous; apices of tibiae dark fuscous; apices of third tarsal segment black; tarsal segment one half as long as segment two and three; claws strongly curved, pulvilli connate to interior surface (at angle) of claw (Fig. 2b). *Genitalia*: Genital capsule: Large, subrectangular in ventral view, width greater than length, anterodorsal margin with three large variously shaped, posteriorly directed sclerotized tergal processes; processes lateral of midline of capsule, and not supporting rectal opening; left processes consisting of single large, basally spinose process, originat-

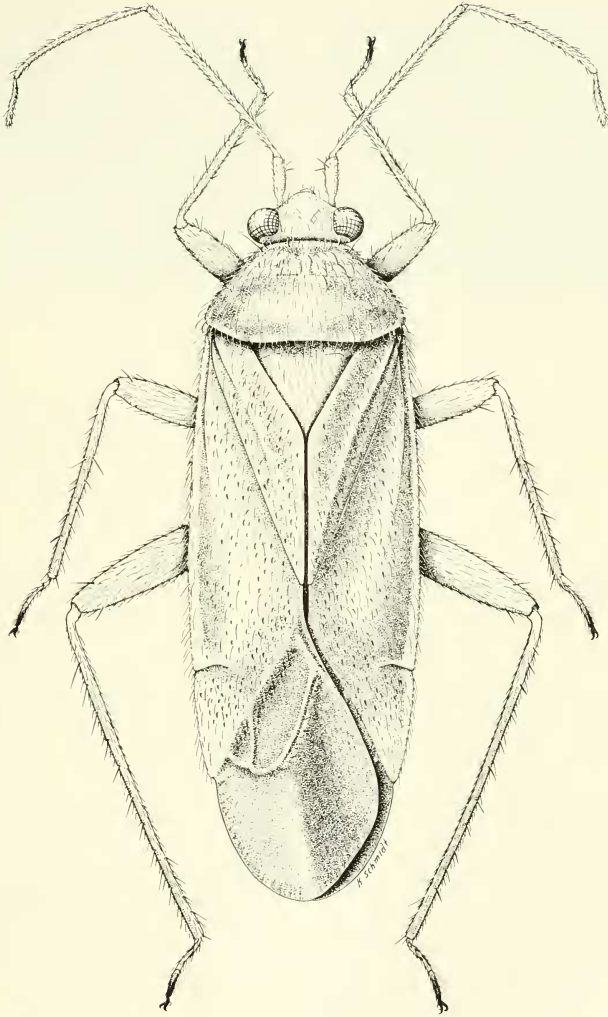


Fig. 1. *Oaxacacoris cygnus*, dorsal habitus of male.

ing on posterior edge of anterodorsal margin (left tergal process, LP) and single small process originating on ventral surface of anterodorsal margin, oriented ventrad into aperture (left ventral tergal process, LVP); right

process solitary, large, usually orientated to left side of aperture (right tergal process, RP); posteroventral margin of capsule with deep paramere and phallosome sockets, and without posteriorly directed processes; ap-



Fig. 2. *Oaxacacoris schaffneri*. 2a, Scale-like setae on dorsum. 2b, Pretarsal structures.

erture large, subcircular. Left paramere: Dorsal lobe (DLL) very large, flattened, strongly spinose, and usually expanded distally; lateral lobe (LAL) narrow, rounded, and curved or sometimes notched distally. Right paramere: Subquadrate in lateral view; interior surface with prominent medial lobe (MIL), sometimes obsolete; dorsal lobe (DLR) usually spinose marginally and projecting dorsad of medial lobe; basal lobe (BLR) solitary or strongly bifurcate, strongly spinose. Phallosome: laterally compressed, open on dorsal and distal surfaces, opening narrow and linear dorsally, merging with larger irregularly shaped distal portion; without secondary ventrobasal opening. Vesica: Ductus seminis simple, cylindrical, flexible with ribs; secondary gonopore horseshoe-shaped, base short and weakly sclerotized; two long posteriorly directed vesical spiculae narrowly attached right and left of midline of ductus basad of secondary gonopore, and practically surrounding ductus; right spicula bifurcate; dorsal portion (DS) short, simple or weakly serrate; ventral portion (RVS) with thick basal half, tapering to long, flattened or rounded, strongly and marginally serrate distal half; left spicula (LVS) with long, sometimes sinuate, rounded shaft, distal third recurved, flattened and strongly serrate marginally, base of recurved portion with fine serrations.

Female. Macropterous. Similar to male in color, vestiture, and structure, except usually somewhat larger with slightly broader head and vertex. *Genitalia*: Following the terminology of Slater (1950). Sclerotized rings: Large, elongate, widely separated; lateral margin of ring moderately folded dorsally, not extending mesad. Posterior wall: K structures of moderate size, heart-shaped with bifid apex, well separated medially; L structure and portion of J structure visible in anterior view.

*Etmology*.—Named for the state of Oaxaca in Mexico, the type locality of the type species; masculine.

*Type species*.—*Oaxacacoris cygnus*, new species.

*Distribution*.—Guerrero, Michoacan, Oaxaca, and Puebla, Mexico (Fig. 24).

*Discussion*.—Identification of the species of *Oaxacacoris* is most easily accomplished by careful examination of the male genitalic structures. To facilitate identification we provide illustrations and descriptions of all the structures for each species.

#### *Oaxacacoris cygnus*, NEW SPECIES

Figs. 1, 3–9, 24

*Diagnosis*.—Recognized by the large size; labium reaching apices of metacoxae or slightly beyond; dorsal vestiture always with densely distributed, dark brown or black scale-like setae; and by the structure of the

male genitalia, especially the shape of the tergal processes (Figs. 3, 4), the swan-shaped left paramere with 6–9 strong spines on distal portion of dorsal lobe (Fig. 6), and basal lobe of right paramere bifurcate, with very large, laterally directed basalmost spine (Figs. 7, 8).

**Description.**—Male (Fig. 1). Length 4.15–5.20; mottled dark green general coloration; dorsal vestiture with recumbent, narrow, black scale-like setae and narrow, golden simple setae. **Head:** Width across eyes 0.85–0.86, width of vertex 0.37–0.39; dark green, tinged with extensive yellow green or yellow areas overall; antennae yellow or yellow brown, segment IV and distal end of segment III fuscous; length of segment I 0.35–0.45, segment II 1.51–1.65; labium reaching apices of metacoxae or slightly beyond. **Pronotum:** Posterior width 1.40–1.59; whitish green anterior of calli, calli and disk dark green, disk narrowly adjoining posterior margin of calli yellow, posterior angles faint green; mesoscutum yellow laterally and medially; scutellum with yellow apex. **Hemelytra:** Dark mottled green; cuneus, embolium, clavus and corium bordering embolium, and apex of clavus sometimes pale yellow or yellow green; membrane lightly suffused with fuscous and with band of dark fuscous bordering apex of inner cell; veins pale. **Legs:** Yellow, metafemora and sub-basal portion of metatibiae tinged with small green spots; femora with short, reclining black simple setae. **Genitalia:** RP very long, flattened, parallel-sided, distal fourth tapered and with several strong spines, or with only single large secondary serrate spine, apex pointed and directed to left; LP long, with bifurcate basal spine, or with simple basal spine, and recurved pointed apex; LVP cylindrical, sinuate with bifurcate pointed apex. Left paramere: DLL palmate with six to nine spines; LAL flattened, sinuate with pointed apex. Right paramere: MIL simple; DLR somewhat pointed distally with several small spines; BLR bifurcate, with long simple slightly recurved basalmost spine, distal-

most spine solitary, or weakly to deeply bifurcate. Phallosome: dorsodistal edge recurved. Vesica: DS faintly serrate, shorter than RVS; RVS flattened and tapered, with strongly serrate margin, apex pointed; LVS with long, tapering recurved distal third, apex pointed.

**Female.** Length 4.35–5.05; width across eyes 0.78–0.85, width of vertex 0.40–0.43; length of antennal segment I 0.43–0.44, segment II 1.50–1.64; posterior width of pronotum 1.50–1.64.

**Etymology.**—From the latin *cygnus* (swan), referring to the swan-like shape of the left paramere in lateral view.

**Distribution.**—Figure 24.

**Holotype** ♂.—*MEXICO:* Oaxaca. 4 mi NE of Miltepec, July 21 1984, Carroll, Schaffner, Friedlander.

**Paratypes.**—*MEXICO:* Oaxaca. 6 ♂, 5 ♀ same data as holotype.

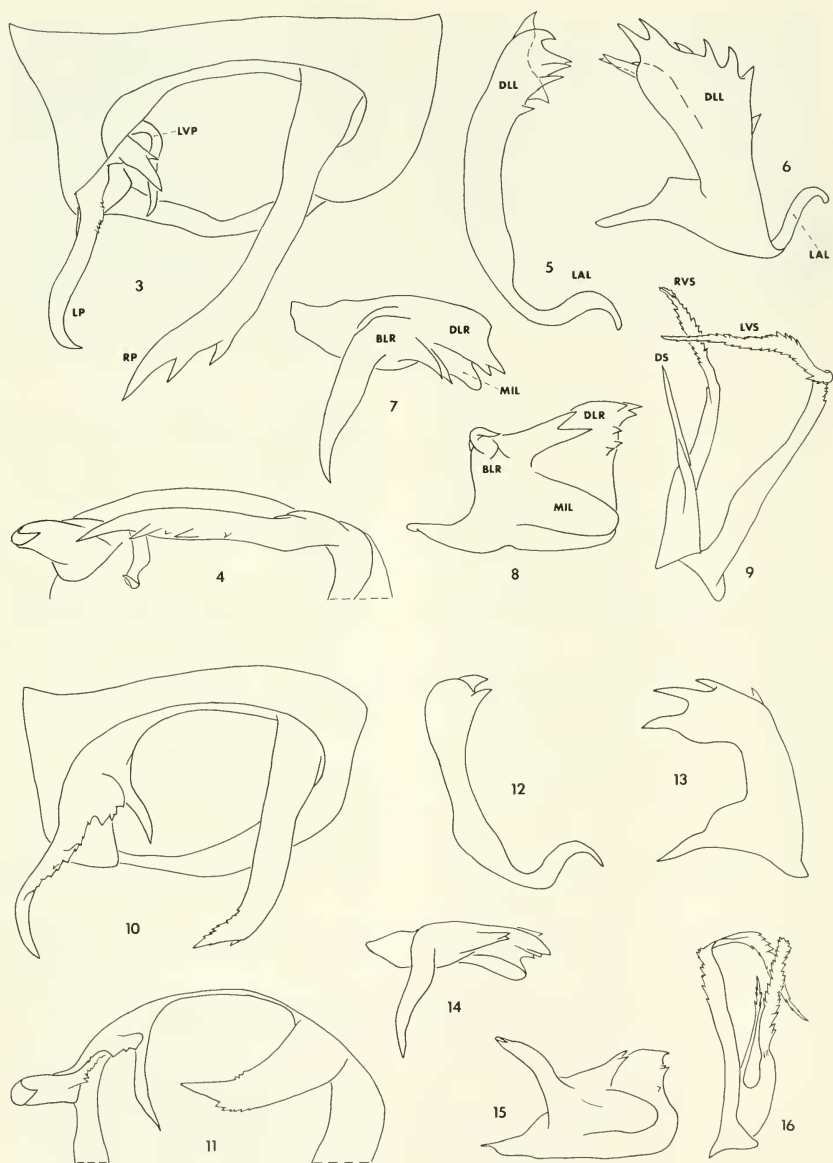
**Additional specimens.**—*MEXICO:* Guerrero. 13 ♂, 15 ♀ 6 mi E of Xochipala, July 13, 1985, Jones, Schaffner. Puebla: ♂, ♀ 4 mi SW of Acatepec, July 21, 1984, Carroll, Schaffner, Friedlander; ♂, 3 ♀ 4.4 mi SW of Acatepec, July 9, 1977, Schaffner.

#### *Oaxacacoris schaffneri*, NEW SPECIES

Figs. 2a, 2b, 10–16, 24

**Diagnosis.**—Similar to *cygnus*, but differentiated by its smaller size; labium reaching well beyond apices of metacoxae, sometimes to sixth abdominal sternite; dorsal vestiture without, or with only a few dark brown, scale-like setae; and by the structure of the male genitalia, especially the shape of the tergal processes (Figs. 10, 11) and dorsal lobe of left paramere with only four strong spines distally (Fig. 13).

**Description.**—Male. Length 3.58–4.05; mottled green general coloration; dorsal vestiture with recumbent, narrow golden or brown, scale-like setae and narrow, golden simple setae. **Head:** Width across eyes 0.72–0.78, width of vertex 0.33–0.34; yellow or yellow green; antennae yellow or yellow brown, segments III and IV slightly fuscous;



Figs. 3-16. Male genitalic structures. 3-9, *Oaxacacoris cygnus*. 3, 4, Tergal processes of genital capsule. 3, Dorsal view (LP, left process; LVP, left ventral process; RP, right process). 4, Posterior view. 5, 6, Left paramere.

length of segment I 0.34–0.35, segment II 1.19–1.26; labium surpassing apices of metacoxae, sometimes reaching sixth sternite. *Pronotum*: Posterior width 1.16–1.20; yellow or yellow green anteriorly of posterior depression of calli, disk mottled green and yellow or sometimes entirely yellow green with margin of disk faint green; mesoscutum orange yellow; scutellum yellow with faint orange cast; area adjoining mesoscutum mostly orange. *Hemelytra*: Mottled green and yellow, or sometimes mostly mottled yellow; cuneus and embolium yellow; membrane very lightly suffused with fuscous, more so peripherally, sometimes with small testaceous band near apex of inner cell; veins testaceous. *Legs*: Yellow; tarsi and apices of tibiae brownish yellow; femora with short, reclining, yellow simple setae. *Genitalia*: RP long, flattened, parallel-sided, distal portion tapered and weakly serrate marginally, with apex pointed and directed to left; LP long, thick, with several large serrations basally, tapered and narrow distally, apex pointed; LVP cylindrical and simple. Left paramere: DLL palmate with four spines; LAL somewhat flattened, sinuate with pointed apex. Right paramere: MIL simple; DLR with several small spines distally; BLR deeply bifurcate, with long simple basalmost spine, distalmost spine short with bifid apex. Vesica: DS serrate, shorter than RVS; RVS wide and flattened, with strongly serrate margin, apex truncate and serrate; LVS long, broad recurved distal third, medially tapering to narrow apex.

Female. Length 3.81–4.25; width across eyes 0.76–0.80, width of vertex 0.38–0.40; length of antennal segment I 0.35–0.40, seg-

ment II 1.37–1.55; posterior width of pronotum 1.27–1.31.

*Etymology*.—Named for Joseph C. Schaffner, who graciously provided all specimens for this study.

*Distribution*.—Figure 24.

*Holotype* ♂.—MEXICO: *Michoacan*. 30 mi S of Nueva Italia, August 8, 1978, Plitt, Schaffner.

*Paratypes*.—MEXICO: *Michoacan*. 5 ♂, 12 ♀ same data as holotype.

*Additional specimens*.—MEXICO. *Michoacan*. 20 ♂, 30 ♀ 28.5 mi S of Nueva Italia, July 9, 1985, Jones, Schaffner, ex *Mimosa rhododactyla* B. L. Robinson (Fabaceae).

#### *Oaxacacoris pueblensis*, NEW SPECIES

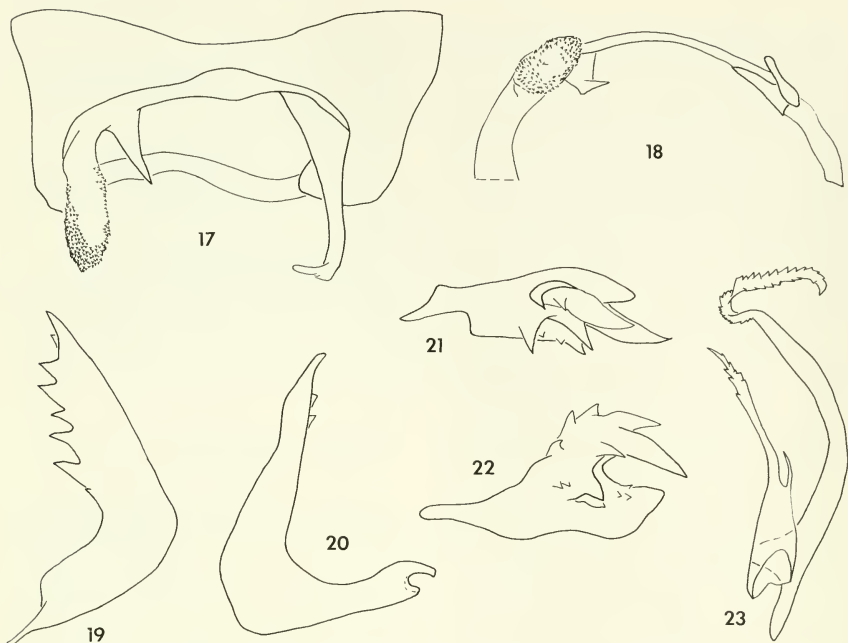
Figs. 17–24

*Diagnosis*.—Readily distinguished from *cygnus* and *schaffneri* by the following characteristics of the male genitalia: left tergal process bulbous with numerous, tiny serrations (Figs. 17, 18); lateral lobe of left paramere notched apically (Fig. 20); basal lobe of right paramere solitary, with large secondary spines (Figs. 21, 22); and dorsal spicula of vesica small and nonserrate (Fig. 23). The scale-like setae of the dorsal vestiture are silvery to golden brown, never dark brown or black as in *cygnus* and sometimes *schaffneri*. Further distinguished from *schaffneri* by the shorter labium.

*Description*.—Male. Length 3.43; mottled green and yellow general coloration; dorsal vestiture with recumbent, long, narrow, golden scale-like setae and long, suberect, golden to nearly black simple setae; metacuneus, clavus and corium bordering

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5, Posterior view (DLL, dorsal lobe; LAL, lateral lobe). 6, Lateral view (DLL, LAL; as in Fig. 5). 7, 8, Right paramere. 7, Dorsal view (BLR, basal lobe; DLR, dorsal lobe; MIL, medial interior lobe). 8, Inside lateral view (BLR, DLR, MIL; as in Fig. 7). 9, Spiculae of vesica (DS, dorsal; LVS, left ventral; RVS, right ventral). 10–16, *Oaxacacoris schaffneri*. 10, 11, Tergal processes of genital capsule. 10, Dorsal view. 11, Posterior view. 12, 13, Left paramere. 12, Posterior view. 13, Lateral view. 14, 15, Right paramere. 14, Dorsal view. 15, Inside lateral view. 16, Spiculae of vesica.



Figs. 17-23. Male genital structures of *Oaxacacoris pueblensis*. 17, 18, Tergal processes of genital capsule. 17, Dorsal view. 18, Posterior view. 19, 20, Left paramere. 19, Lateral view. 20, Posterior view. 21, 22, Right paramere. 21, Dorsal view. 22, Inside lateral view. 23, Spiculae of vesica.

claval suture sometimes with darker brown scale-like setae. *Head*: Width across eyes 0.73, width of vertex 0.34; yellow; antennae testaceous, segment IV and apex of segment III fuscous; length of segment I 0.38, segment II 1.13; labium reaching apices of metacoxae. *Pronotum*: Posterior width 1.16; yellow anteriorly of posterior depression of calli, calli somewhat darker, disk mottled green and yellow, peripheral border faint green; mesoscutum and scutellum orange yellow. *Hemelytra*: Mottled green and yellow, interior of cuneus yellow; membrane darkly suffused with fuscous; veins fuscous, rufous adjacent to cuneus. *Legs*: Yellow; tarsi and apices of tibiae lightly fuscous, with long, suberect, yellow simple setae. *Genitalia*: RP long, thick basally, narrowed me-

dially, apex truncate with single large spine directed to left; LP bulbous, surface densely serrate, with single apical and basal spines; LVP cylindrical, short with pointed apex. Left paramere: DLL long, broad basally, tapering to pointed apex, proximal surface with five spines; LAL fairly broad, with notched apex. Right paramere: MIL obsolete; DLR small, with several small spines on interiobasal surface; BLR large and solitary, with large spines, apex extending distad of distal end of DLR, and with large basal spines. Vesica: DS very small, simple; RVS narrow with strong marginal serrations, much smaller than LVS; LVS with curved portion strongly hooked and marginally serrate.

Female. Length 4.01-4.32; width across





Fig. 24. Distribution of *Oaxacacoris cygnus* ●, *Oaxacacoris schaffneri* ▲, *Oaxacacoris pueblensis* ■.

eyes 0.76–0.77, width of vertex 0.39–0.40; length of antennal segment I 0.44–0.46, segment II 1.40–1.65; posterior width of pronotum 1.31–1.38.

Etymology.—Named for its occurrence in the state of Puebla, Mexico.

Distribution.—Figure 24.

Holotype ♂.—*MEXICO*: *Puebla*. 16 mi NW of Acatlan, July 14, 1974, Clark, Murray, Ashe, Schaffner.

Paratypes.—*MEXICO*: *Puebla*. ♂, 15 ♀ same data as holotype.

Additional specimens.—*MEXICO*: *Puebla*: 4 ♀ 5 mi SE of Izucar de Matamoros, July 20, 1974, Carroll, Schaffner, Friedlander; ♀ 7.3 mi SW Izucar de Matamoros, July

22, 1981, Bogar, Schaffner, Friedlander. Individuals of these populations are slightly greater in length (4.14–4.68) and darker than the holotype and paratypes but are indistinguishable from the later specimens with regard to external morphology and vestiture. We are tentatively recognizing them as conspecific with the type, pending the acquisition of male specimens from other areas for detailed comparison. All three localities for this species are within a 35 mile area.

#### ACKNOWLEDGMENTS

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The authors contributed equally to all facets of this paper.

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